

What is claimed is:

1. A wireless sensor incorporated wheel support bearing assembly for rotatably supporting a vehicle wheel relative to a vehicle body structure, which assembly comprises

an outer member having an inner periphery formed with a plurality of raceways and adapted to be secured to the vehicle body structure through a knuckle;

an inner member having raceways confronting with the raceways in the outer member;

a plurality of rolling elements interposed between the raceways in the outer member and the raceways in the inner member that confront with each other;

a sensor section for detecting a target of detection;

a sensor signal transmitting section for transmitting by wireless a sensor signal outputted from the sensor section; and

an electric power receiving section for receiving by wireless an electric operating power for the sensor section and the sensor signal transmitting section,

wherein the knuckle is provided with at least an antenna in one or both of the sensor signal transmitting section and the electric power receiving section.

2. The wireless sensor incorporated wheel support bearing assembly as claimed in Claim 1, wherein one or both of the sensor signal transmitting section and the electric power receiving section are, in its substantial entirety, arranged in the knuckle.

3. The wireless sensor incorporated wheel support bearing assembly as claimed in Claim 1, wherein the sensor signal transmitting section and the electric power receiving section are integrated together into a unitary component to define a transmitting and receiving unit, the transmitting and receiving unit being secured to the knuckle.

4. The wireless sensor incorporated wheel support bearing assembly as claimed in Claim 1, wherein the sensor signal transmitting section, the electric

power receiving section and the sensor section are integrated together into a unitary component to define a wireless sensor unit, the wireless sensor unit being secured to the knuckle.

5. The wireless sensor incorporated wheel support bearing assembly as claimed in Claim 1, wherein the sensor section comprises a revolution sensor including a pulsar ring and a magnetic sensor and wherein the pulsar ring is mounted on the inner member and the magnetic sensor of the revolution sensor unit, the sensor signal transmitting section and the electric power receiving section are integrated together into a unitary component to define a wireless sensor, the wireless sensor unit being secured to the knuckle.

6. The wireless sensor incorporated wheel support bearing assembly as claimed in Claim 5, further comprising an outer race of a constant velocity joint fitted to the inner member or provided as a component part of the inner member, wherein the pulsar ring is mounted on the outer race of the constant velocity joint.